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Tales From the Wheel: An IT-Fueled Ride as an UBER Driver

Full Paper

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Abstract

Uber, a ride-sharing service, is a unique example of how technology can connect people. It has the potential to transform transportation by providing a technology-mediated marketplace for transportation of people and goods. This paper presents an ethnographic study of ride-sharing via Uber with a focus on examining the roles of technology and trust in this new marketplace. The authors used a grounded theory approach to interpret and analyze emergent themes collected from one of the author's journals, interviews, and service logs as well as official documents and text messages. This analysis was used to develop a theoretical model that emphasizes the role of signals in developing expectations, clarifying roles, and adapting trust.

Keywords

Sharing economy, trust, communications, social dynamics.

"Cars are moving because of what we do, so there's an imperative to go beyond just the technology." Travis Kalanick, Uber CEO

Introduction

Uber is a phenomenon that has defined ride sharing and Uber's model, which efficiently and effectively matches drivers and riders, has the potential to transform transportation and, for that matter, numerous marketplaces in a variety of industry sectors. We recently began research to understand the nature of ride sharing and how technology affects users; however, as the opening quote suggests, there is more to Uber and the sharing economy than technology and apps. So, our research question focuses on the role that technology plays in building relationships between strangers in the shared economy. To address this question, we share the experiences one of us (Author 1) had as he began driving for Uber. These observations led to insights about people, technology, markets, and opportunities for research presented by Uber and other shared economy services. While some of this story represents a joint venture between the three authors, much is derived from the first-person journals prepared by Author 1 that recount the events and observations he experienced and made as he worked as an Uber driver.

Because we had no clear theoretical precedent, we decided it was important to experience Uber first hand. This essay, thus, reflects observations set as an exploratory ethnographic study of ride-sharing via Uber with a particular focus on the issue of trust. Author 1 recorded observations, mostly in chronological order within 24 hours of his driving experiences. When he finished writing his narratives, he presented these to Authors 2 and 3 for analysis. In the end, we were faced with the challenge of framing these observations. To do so, we used a grounded theory approach that involved examining the narratives, deriving themes, and building aggregate factors directly from the narratives.

The paper is organized as follows. First, we discuss the literature that helped sensitize us to the topic so we could compare and contrast our findings with existing literature. Next, we discuss the methods we used

to collect data, analyze the narratives, and interpret the results. Following this, we discuss the context of the research, including the process of registering and driving for Uber. We then present our interpretation and the theoretical model we derived from the data. Finally, we discuss the findings of the research.

The Shared Economy

The shared economy has become a dominant business model. The term, also known as the “peer economy” or “collaborative consumption”, envisages a new type of asset ownership. Instead of buying an asset, an individual may rent it from a provider who is willing to “share” the item. The matching of demand and supply is enabled by the Internet and new emerging information technology capabilities (e.g., the Uber app). The shared economy has grown substantially and is expected to continue to grow significantly (PWC, 2015). Nevertheless, the motivation for using these services remains understudied. While economic benefits and convenience are likely important in users’ evaluations, there are a number of other factors that emerge and play a role in the success factor of Uber, a prominent player in the shared economy.

Uber is a ride-sharing service that allows individuals to use taxi-like services that are provisioned by private parties using their individually-owned vehicles. Uber functions as a brokering service that matches a rider with a driver through an application developed and maintained by Uber. While users seem to enjoy this service as evidenced by the rapid growth of Uber, it is important to understand which specific factors play a role in encouraging individuals to agree to use their cars as a taxi and riders’ ongoing acceptance of these services. Importantly, we were interested in identifying how the Uber app mediates this process and what role(s) it plays in the mind of riders and drivers.

While there are few studies that have examined the shared economy, most of them are written from the perspective of the users of shared economy, as opposed to providers or vendors of shared economy. Our study is important because it is one of the first works to examine the sharing economy from the perspective of the provider of service. Thus, it offers a unique insight into the natural relationship between actors and how technology mediates this relationship.

The Process of Going on the Road for Uber

This section is a summary of the observations made by Author 1 as he prepared to drive for Uber. Before driving, one must become registered with Uber, which requires that the driver meet certain standards (e.g., a car in good condition, successfully passing a background check, insurance and registration, etc.). All of these activities are carried out through the Uber Driver’s account, which a driver opens when s/he signs up. Interestingly, Uber refers to drivers as partners and to emphasize this to drivers, they stay in constant contact with potential drivers during the registration period (e.g., Uber sends to prospective drivers daily updates with average hourly earnings for their area). Uber also incentivizes drivers to “share the wealth” by referring other drivers with the promise of up to \$500 for successful referrals. The communication process with Uber is multi-channeled and includes emails, text messages, and messages via the Uber app.

Once a driver passes the registration process, the driver is allowed to download the Driver App, a separate app from the one used by riders. Next, Uber immediately invites the driver to training sessions. The training session was the only face-to-face interaction Author 1 had with the representatives of Uber. In addition to the basic information about driving for Uber, drivers have a chance to interact with one another. Interestingly, one of the new drivers was a woman in her 50s. When asked about any concerns for her safety, she said she knew the community well and felt safe, which helped to assuage Author 1’s safety concerns. Thus, there is likely an important social influence component that is facilitated by these sessions.

Uber Communications

Uber communicates extensively with drivers to, presumably, encourage participation. For example, Uber sends email updates about upcoming events and includes an estimate of earnings. Author 1 joined immediately prior to one of the biggest events in the local community; the football game between Iowa State University and its rival, the University of Iowa. Within the email message Uber included charts showing potential opportunities to drive during surges, which generate premium fares for drivers.

Taking the Wheel

To be able to respond to requests, a driver must login into the driver app. Uber controls access to the driver app by updating the app weekly, which allows Uber to verify that the driver's performance was adequate and that the driver's ranking is above the threshold to continue driving. Those who have significant Uber policy violations will not be able to operate the app and can't respond to riders' ride requests. Interestingly, the driver only sees one car on the map, his or her own vehicle, while riders see any number of drivers in the area. This asymmetrical information allows Uber to preclude drivers from logging off if, for example, they saw too many competitors in their region while at the same time it encourages riders, who see all of the cars, to use Uber because they can see whether there is a supply of drivers.

When the driver app beeps it indicates that a rider has placed a request for a ride. The process of responding to a ride request is standardized: the phone continuously beeps and a circle, similar to a clock, appears in the middle of the app with an indicator of the time left to accept the request. While the rating of riders is shown to drivers, the driver only has 10 seconds to accept the ride, so there is actually very little time to make an evaluation. Thus, while the Uber app does, in principal, provide drivers with information about the riders, the information is hard to digest and likely means that drivers have less information about riders than is advertised by Uber. Nevertheless, when a ride is over, both the driver and rider are encouraged to rate each other, which, as discussed below, becomes an important factor in the power-relationships between drivers and riders. Once a ride is complete, the driver app displays information about the trip, including the distance, duration, and the revenue; thus, there is a high degree of transparency for drivers about their time on the road and their earnings from Uber driving.

The Role of Trust

While our research developed 12 themes and four aggregate factors, given space constraints we focus much of our discussion on the issue of trust and how the Uber infrastructure and the other factors we identify interact with this construct. Trust is a factor that has been studied extensively in online settings such as for online retailers. For example, Gefen and colleagues (Gefen, Karahanna, & Straub, 2003) discussed the role of trust and technological attributes of websites in affecting the relationship between a buyer and e-vendor by showing that trust is as important as other Technology Acceptance Model (TAM) variables in influencing acceptance and use. This is consistent with a variety of literature examining trust suggesting that trust represents a central social complexity reduction strategy that is critical in settings where there are no established rules or customs so as to reduce risks in social exchanges (Luhmann, 1979; Zucker, 1986). Thus, trust is an important variable that enables transactions to take place in online settings, but Uber is an application that has both an online and an offline component. Specifically, while many of the characteristics of online retail settings such as those described by Gefen and colleagues are present with Uber, there are also important characteristics of Uber that are unique to this environment.

For example, unlike with online retailers, the interface in Uber is designed to enable real-time, two-way communication directly between the driver and the rider. Further, while this communication is first mediated by the mobile application, it is designed to culminate in a face-to-face meeting. As a result, the perceived risks of online shoppers would be quite different compared to the risks faced by Uber drivers and riders. Specifically, Uber participants are faced with potential risks to their physical safety and security. For example, a rider might be concerned that a driver might attack, kidnap, or assault him or her and a driver might be concerned that a rider could damage his or her car or inflict personal injuries. While these concerns are often the most salient, a rider is also faced with more modest risks such as inferior service quality, the quality of the car, and erratic or dangerous driving behavior of the driver.

These characteristics and others suggest that a more sophisticated model of trust is needed to understand Uber. Specifically, an important characteristic of Uber is the fact that both the drivers and riders can rate each other. This rating process is important because it is designed to maintain accountability both for quality service and for safety and security. In many respects, facets of Uber are more similar to peer-to-peer marketplaces such as Ebay or Amazon Marketplace. For example, Ba and Pavlou (2002) examined the role of trust-building technologies in electronic markets and found that reputation-based feedback systems can induce credibility-based trust and that this can have an effect on pricing and information transparency. Thus, an infrastructure that supports information transparency related to the performance of buyers and sellers can generate trust and lead to greater acceptance of the transaction or service. These

findings are consistent with the model offered by Woolthuis, Hillebrand, and Nooteboom (2005) that suggests three primary ways of mitigating relational risk: *Opportunity Control* (e.g., contracts and legal enforcement), *Incentive Control* (e.g., reputation and switching costs), and *Benevolence* (e.g., values, norms, kinship, etc.). While we see all three of these at work with Uber, Opportunity Control is likely where trust originates while each of the others play a role as the transaction unfolds. We explore the role of trust and these other factors later in our examination of our data.

Methods

Data were collected using ethnographic methods and focused on understanding events, languages, rituals, institutions, behaviors, artifacts, and interactions (Cunliffe, 2010; Van Maanen, 1988) of Uber drivers and their customers (Figure 1). The utility of this approach is that it allows a researcher to become embedded within the culture of interest and emphasizes understanding and sensemaking (Madison, 2005). Author 1 joined Uber as a driver and engaged in more than 400 rides with over 700 passengers. The fieldwork continued from September 2015, through February 2016, with 76 days of actual driving for Uber. Data were collected via a personal ethnographic journal of rides, informal discussions with passengers and Uber drivers, and reviews of documents provided by Uber. Data were gathered from a variety of sources to ensure that a range of perspectives representing drivers, passengers, Uber, and the public were represented within the data (Charmaz, 2014). These interactions provide a rich, credible, data set through prolonged engagement, persistent observation, and the triangulation of responses (Lincoln & Guba, 1985). As with all ethnographic work, we make no claims of statistical generalizability, but we do believe that our insights about how individuals develop trust in computer-mediated environments provide analytic and naturalistic generalizability to other similar settings in the shared economy (Kvale & Brinkmann, 2009). Authors made every effort to adhere to ethical practices of ethnographic data collection: anonymity of conversations was maintained, notes were coded in a manner to obscure any identifiable information, and aliases were substituted when respondents used names (Charmaz, 2014). Unfortunately, due to the short-lived nature of interactions, we were unable to share our findings or results with passengers.

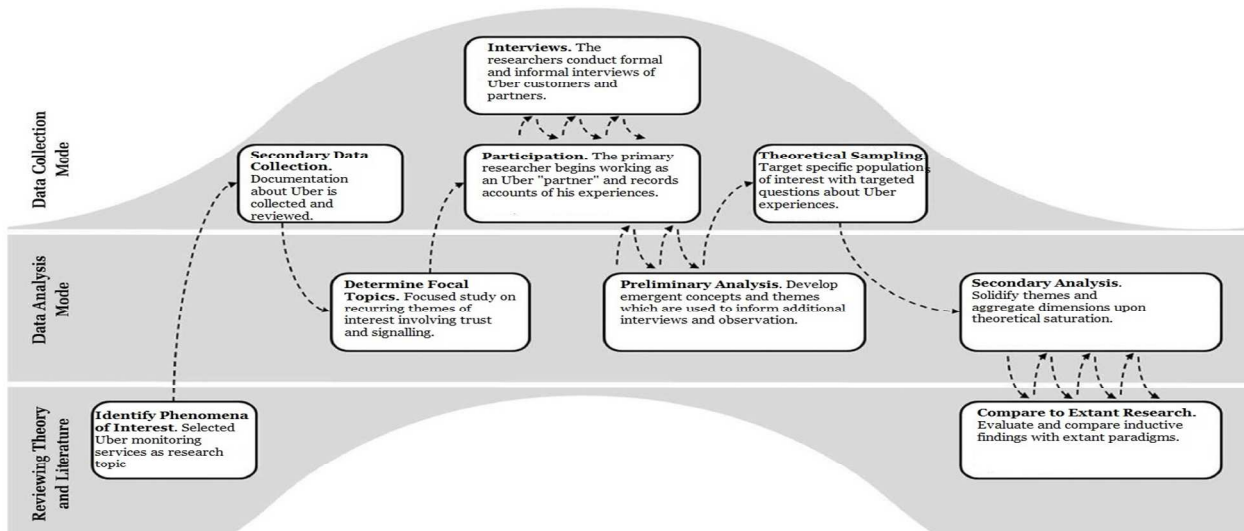


Figure 1. Data Analysis and Collection Strategy (adapted from Harrison & Rouse, 2014)

The analytical approach we used to evaluate our ethnographic data is based on grounded theory, a systematic and rigorous method for performing inductive research (Glaser & Strauss, 1967; Strauss & Corbin, 1998). We used an iterative process to develop inferences about outcomes and interactions affected by the continuous monitoring systems that Uber employs. We analyzed our ethnographic data using a grounded theory process noted for improving the rigor of theory development from qualitative data (Gioia, Corley, & Hamilton, 2013; Glaser & Strauss, 1967; Marshall & Rossman, 2011; Miles & Huberman, 1994). We began by investigating how Uber's monitoring and communication systems support and supplant trust. Then we compiled evidence from multiple sources that challenge, support, or alter our tentative inferences (Sutton & Hargadon, 1996). We continued building this evidence in an

iterative process until we reached a point of theoretical saturation, where our additional data was not offering new or opposing themes (Corbin & Strauss, 2008). This coding strategy ensured a rigorous chain of evidence from our observations to our theoretical insights (Pratt, 2009).

Our data coding strategy was designed to build theory in a creative, but systemic, manner (Strauss & Corbin, 1998). During coding, we used a triangulation strategy whereby two researchers independently coded the data set (Charmaz, 2014). Any codes where the researchers disagreed were discussed with the third member of the research team who acted as an arbiter (Kreiner, Hollensbe, & Sheep, 2009). During the coding process, we identified dozens of 1st-order concepts that emerged from our empirical data. These concepts represented common and vivid observations of interactions. Then, through iterations of grounded theory processes, we grouped critical concepts into 12 more abstract 2nd-order axial themes (Strauss & Corbin, 1998). During the second-order analysis, we focused on emergent themes and the relationships between them to develop four aggregate dimensions.

Data Interpretation and Synthesis

Monitoring Systems

We found that the monitoring systems that Uber employs act to provide continuous feedback loops and, thereby, build accountability. However, we also found that as an emergent technology, Uber also can propagate battles for control between riders and drivers before more stable trusting relationships emerge. Our coding of the data, and the link between our codes and theoretical insights, are summarized in Figure 2. This diagram displays how our observations of recurrent concepts within the data were grouped into general themes during the coding process (Gioia, Corley, & Hamilton, 2013). Beyond the existence of a monitoring system (labeled as a system for sharing signals), our analysis of the data infers 3 additional aggregate dimensions emerging from our themes: (1) customers and drivers have dynamic expectations of the Uber service, (2) the roles of the drivers and customers can be unclear, and (3) trust is both developed and substituted by the monitoring systems. We offer descriptions of the aggregate dimensions and highlight in more detail how these dimensions interact with adaptations to trust.

Shaping of Signals

The Uber App is a powerful tool because it functions as a brokering service that links riders with drivers and because of the persistence and transparency of the information it collects and transmits. As a result, it shapes the nature of the signals presented to both riders and drivers by offering frequent, sometimes constant communication, it offers a record of events and transactions that is permanent, and it makes these data available so that information about the actors, events, and transactions are visible to all stakeholders. The frequency of communication is important not only for riders but also for drivers because it keeps them engaged and it enables coordination with riders. Furthermore, the persistence of the data is important because it holds stakeholders accountable and is a fundamental component of the infrastructure that fosters the potential for calculus-based trust to develop both for riders and drivers.

Author 1 observed that the persistence of the data about trips and the ratings represent an important incentive to maintain a high-level of performance because negative information would not disappear and was visible to riders as well as Uber employees. Similarly, information transparency means that both drivers and riders know that information about trips is recorded and is clearly visible to other stakeholders. Again, this creates an infrastructure that fosters trust in the system for not only safety and wellbeing, but also for service quality. As discussed below, these features of the Uber App that shape signals for stakeholders are critical in creating the environment and experiences observed by Author 1.

Development of Expectations

The Uber app and the service's reputation have created a set of expectations for riders about the service, particularly manifest as expectations related to *Personalized Services*, *At-will Access* to the service, and the *Nature of the Exchange*. Expectations about personalized services include attitudes about the condition of the car, accoutrements in the car (e.g., phone chargers, water, etc.), and curb-to-curb service. Expectations about at-will access include the idea that the mediation of the Uber app makes the process of requesting and monitoring the arrival of the vehicle both easy and transparent and that the payment process is seamlessly integrated into the process. The nature of the exchange refers to the idea that riders

negotiate with the driver not only for the nature of the service (e.g., can you stop by McDonald's?) but also for evaluations of the service provided by the driver (e.g., You'll get 5-stars if you do this or that extra service). As we discuss in the next section, riders have an expectation that, in part, arises because they believe that they are in a power position relative to the driver. This not only sets high expectations for the service quality but also leads to expectations for "extra" benefits beyond a mere ride from point A to point B.

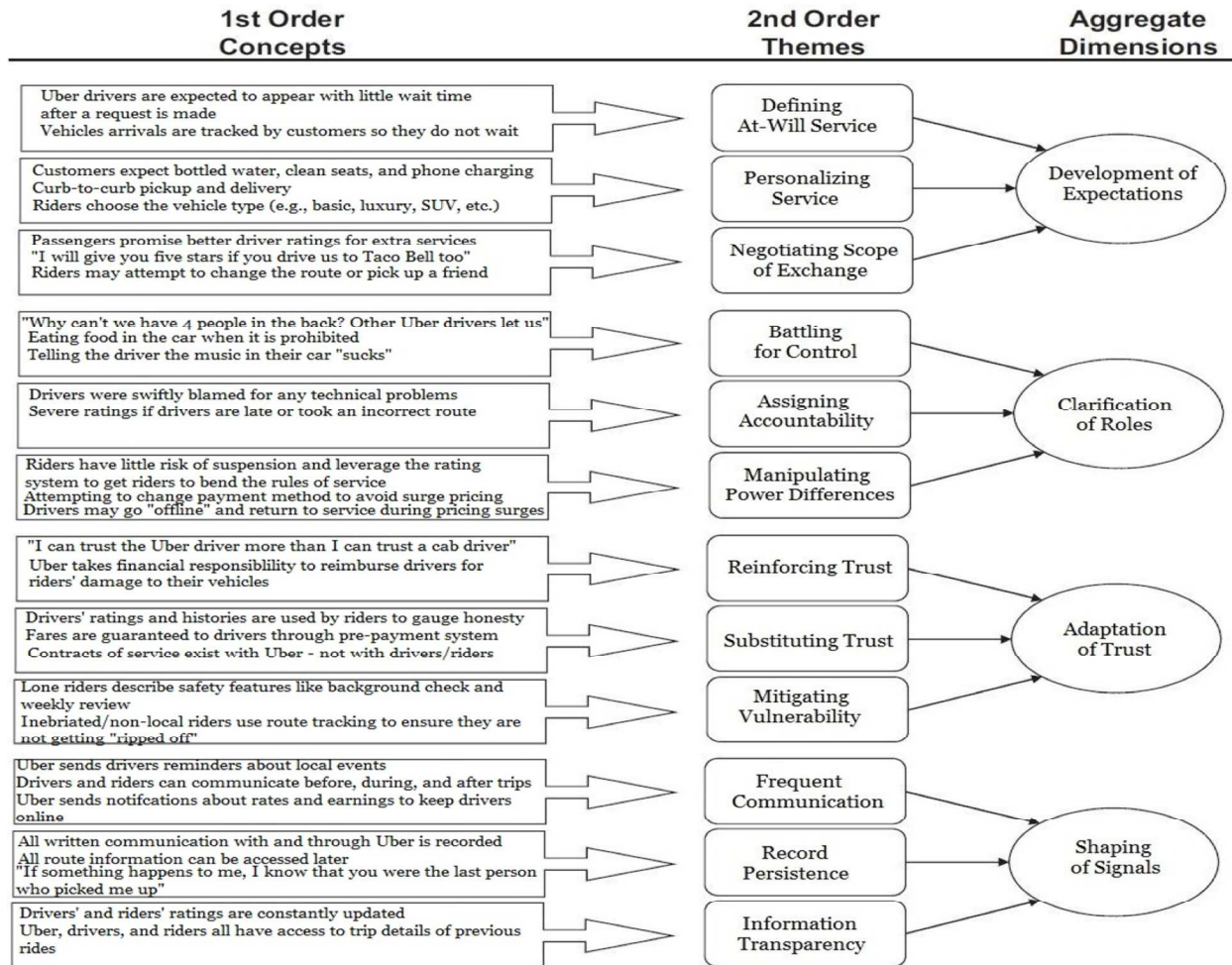


Figure 2. Diagram of Concept, Themes, and Aggregate Dimensions

Clarification of Roles

The nature of the service and the rating system create an environment where the role of the driver and the rider are quite distinct and, importantly, different in levels of power. We have labeled the three themes related to roles as *Battling for Control*, *Assignment of Accountability*, and *Manipulation of Power Differentials*. Battling for control refers to the idea that the shift of power to the rider enabled by the Uber app leads riders to, in essence, push the limits of norms and expectations about how they treat the driver and the car. Author 1 observed that riders would, for example, disrespect the driver, try to bend the rules, eat food, or treat the driver as a non-existent entity. The assignment of accountability refers to the idea that riders viewed any error or mistake to be the responsibility of the driver (e.g., if the Uber app froze or reset, the driver was blamed as being a "F&*k-up") and that expectations for perfection were high (e.g., riders expect drivers to be highly skilled professionals vis-à-vis a master chef or barista). While the first two themes are distinct, they are clearly related to and, perhaps, derivative of the third theme that involves manipulations of power differences. After starting to drive for Uber, Author 1 quickly realized that he had less power in the relationship with riders, and this was manifest in many cases where riders

expressed attitudes and behaviors that demonstrated that they also recognized this power differential. Interestingly, this is structured into Uber's policies. For example, while a driver could rate a rider, it would be unusual for a rider to be suspended; alternatively, drivers could easily be expunged if their evaluations are too low. Riders overtly used ratings to manipulate drivers into providing extra services and tolerating bad behaviors.

Adaptations of Trust

The infrastructure of Uber, which shapes signals for communication, data persistence, and information transparency, creates an environment that fosters trust in both riders and drivers. Our data suggests that there are at least three manifestations of trust that emerge as a result of the Uber infrastructure. Further, the trust that develops in both drivers and riders has an influence on roles and expectations, which, in turn, influence how each stakeholder engages in the Uber marketplace and their attitudes about trust.

Reinforcing Trust

Trust is an important factor in facilitating interpersonal exchange. Dependence of parties in the exchange requires trust in the relationship to mitigate the risks of dependence. In Uber, the degree of dependence varies based on the time of day and number of drivers or riders. In general, however, the dependence of drivers on riders is higher. First, a driver's decision to commit his vehicle, a valuable asset, for the purposes of transporting others is a sign of a commitment. Although Author 1 owned his vehicle and the primary reason for driving for Uber was to conduct an exploratory research study, there were drivers he encountered who had made serious commitments to drive for Uber. For example, some drivers had purchased new cars or some had upgraded a late-model car solely to drive for Uber. Interestingly, even though drivers are using their personal vehicles and they take risks by giving rides, they still engage in driving. This is illustrated by this recollection of a discussion Author 1 had with another driver that went something like this:

Once one of my passengers puked inside on the back seat. I took lots of pictures of this mess and reported to Uber. Uber paid quite well for detailing and cleaning. I got \$200 from them. If you have a similar incident, don't worry, just make sure you take lots of pictures.

There were also drivers who did not have modern smart phones and thus used a mobile technology provided by Uber. These drivers had to pay a fee for using Uber technology regardless of the number of trips they made per week. Moreover, drivers often need to commit to activities that don't return revenues directly. For example, some drivers go to locales near places where ride requests are more frequent and spend considerable time waiting for requests. Further, when a request is placed a driver must drive, sometimes lengthy distances, to pick up a rider and this time and effort do not figure into the driver's revenues. These examples illustrate that drivers make a greater investment in Uber than do riders, which increases the dependence of drivers on riders; thus, there is an asymmetry of dependence.

Author 1 noted that when he started to offer rides he did so hesitantly; however, he eventually became much more comfortable to respond to ride requests and to pick up riders. Nevertheless, until he picked up passengers, he would frequently worry about how many passengers he would have because sometimes, without asking permission, 5 or 6 passengers would try to squeeze into his five-passenger car. He was often worried that he would be pulled over by the police or that his car would be damaged. A driver would never know how many passengers would be waiting to be picked up because the Driver app shows only one potential rider; thus, when he arrives he has to decide whether to "accommodate" over-booked riders.

Substituting Trust

Based on his experience driving for Uber, Author 1 developed the perspective that very few drivers would have trust in the benevolence of riders without the assurances created through proper institutional safeguards. The Uber infrastructure mitigates some of the risks associated with the driver's dependence on the riders. For example, because Uber records and makes available the time the request was placed, data showing the rider's location, the dispatch time, and travel time and distance, much (but not all) of the information about the impending ride is well defined and, as a result, some uncertainty is reduced. Similarly, Uber manages payments through a pre-payment system, allowing a driver to cancel the ride and earn the minimum fare if the rider does not show up. By restricting when riders can cancel ride requests, Uber's rules also reduce risks of lost revenue for drivers.

As Author 1 observed, riders often promised hefty tips only to end the ride with a promise to rate the driver with high marks. This demonstrates that interactions with strangers who will not necessarily encounter each other again and that are based purely on trusting beliefs associated with benevolence and goodwill create more risks compared to situations where partners have an ongoing relationship. If not for the controlling mechanism of the technology, the risk that riders might engage in opportunistic behaviors would be much higher and, as a result, the service would likely not operate effectively. Of course, this risk mitigation also was at play for riders. Many riders noted how they felt safe because Uber was watching out for them, that they knew that the driver would not overcharge them, or that the driver would take a longer route than is needed. When Author 1 asked drivers why they chose to use Uber, most riders would respond that they felt Uber was more trustworthy and “honest” than would be a taxi. The following represent a summary of the types of comments made by passengers:

I don't trust cab drivers. They want to screw you over every time. Whenever they find out that I am a stranger in a city, they try to make a very long ride and screw me over.

Taxi drivers are not honest people and want to rip you off whenever they have a chance. If they see I am drunk they will drive longer and try to charge me more.

When considering these structures in light of transaction cost economics, we see that reliance on “partners” (i.e., riders) follows from control, which is based on confidence in the rules established by Uber (Woolthuis et al., 2005). The deterrence mechanisms built into Uber reduces the potential of a rider engaging in opportunistic behavior and points to the idea that trust in the relationship between the driver and rider is not needed; rather, trust in the Uber infrastructure and the embedded controls it creates are where trust is placed by both drivers and riders. Contracts are a form of formal control. In relations characterized by high uncertainties and specific investments, it is logical to expect that the intermediary will be required to institute rules that define responsibilities, recognize investments, establish accountability, and promote conflict resolution as well as other relational parameters. Uber's technology fills in this role by generating a pseudo contact between a rider and a driver that allows Uber to monitor, store, and retrieve details of the interaction, which helps reduce and manage conflict.

Mitigating Vulnerability

Uber's app is, in fact, a safety net that removes the need for trust in the person on the other end of the transaction. Because of the app, the relationship between a rider and a driver becomes very structured, contractual, and (mostly) transparent. For example, before the rider gets into a car, s/he has information about the driver such as the first name and a photo, the vehicle's license plate number and model, and the driver's rating. Nevertheless, Uber only shares a rider's first name and pick-up location, which offers some degree of anonymity for the rider. As a result, the information flow is not equal between each party, which helps to encourage riders to feel safe when stepping into another person's private car (i.e., s/he knows who the driver is, but s/he doesn't know much about him or her).

Another feature of Uber that reduces perceptions of vulnerability is the use of accurate and real-time location based technology. For example, Uber depicts the path of the trip and saves this information for both riders and drivers. Author 1 noted that the fact that the trip details are documented gave him peace of mind because he knew that if something would happen to him, everyone would know where he was located and who he was with. The same reasoning was brought up by many passengers as paraphrased below.

I like the fact that I can check whom I am requesting. I can see your photo, your name, your car's license number, model, and its color. If something happens to me, I know that you were the last person who picked me up and you'll be in trouble if you are foul intended. Thus I can trust the Uber driver more than I trust a cab driver, about whom I have no information.

Author 1 noted that his customers frequently described their trust or confidence in Uber to transport them while they were in an inebriated state. His passengers felt that it was very safe to ride Uber when they were in a compromised state and this was largely because of the sense of security and trust enabled by the two-way identification. This is illustrated clearly by one event that Author 1 recounts:

On one of the night trips, three people, a couple and their female friend, requested a ride to two separate destinations. When the couple insisted that I first drop their female friend at her home, their friend said “This is Uber, don't worry.” While driving the female passenger to her

residence, I asked her what she meant by mentioning Uber to assuage her companions' worries, she asked me, "Doesn't Uber screen their drivers? Doesn't your record show up on my friends' phone when they placed the request? I don't think you will harm me knowing that you'll be the first suspect."

Uber suggests on its website that each driver undergoes federal and state background checks and driving background checks and they have end-to-end insurance, which covers both riders and drivers. Furthermore, when a driver and a rider must communicate by, for example, placing a phone call, Uber uses technology that anonymizes the numbers of both parties. For example, Author 1 had five instances when people called to see if their phone or purse was left in the car. In these cases, he arranged for a meeting place and would deliver their items. The two-way rating system, too, provides a layer of security because any problem behaviors will be investigated by Uber and may prevent that party from using Uber again. The safety net enabled by the technology platform and its ability to deter opportunistic behaviors establishes, in essence, a quasi-contractual relationship that mitigates the need for benevolent forms of trust.

Author 1 engaged in numerous conversations with riders and many riders alluded to the idea that they understood that institutional trust was important with Uber (they would not use this terminology, of course, but they recognized the importance of Uber "watching over them"). For example, many people mentioned that Uber is mediating the interaction between the drivers and passengers. Uber also emphasizes this on their website where they highlight the security measures that exist that ensure the safety of riders and drivers. Nevertheless, a close reading of their disclaimer shows that they ask riders and drivers to assume the actual risks of engaging with the service. Author 1's interactions with riders and other drivers suggest that most people interpret the Uber infrastructure and messaging as guarantees of safety and security.

Inferences and Conclusions

Our contribution comes not from filling a "gap" in existing literature, but rather through the discovery and exploration of problems with the application of current paradigms (Alvesson & Sandberg, 2011). Our research reveals that some monitoring technologies can act to build some forms of trust while simultaneously acting as substitutes for other forms of trust. Uber represents an interesting case where an emergent technology facilitates exchanges and individuals literally place their lives in a stranger's hands. While, generalizability is not the central goal of qualitative research (Charmaz, 2014), we believe that our insights about the way trusting relationships are developed when using Uber may provide useful inferences to other similar services emerging in the shared economy.

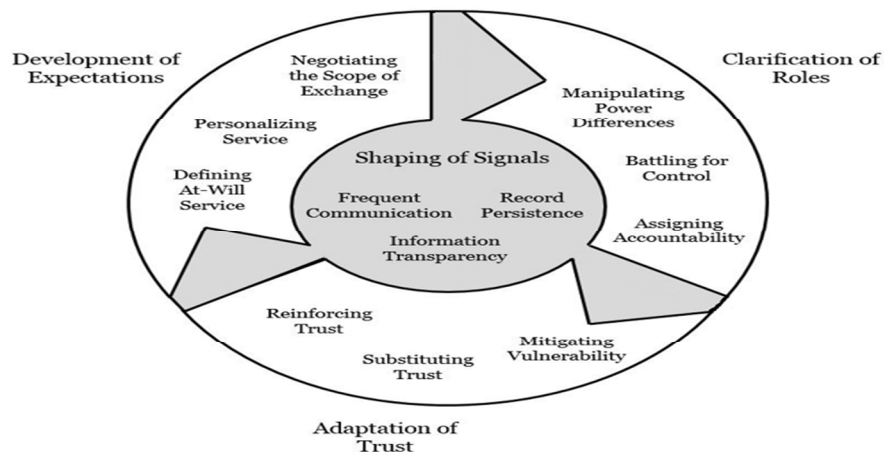


Figure 3. The Role of Signals in Developing Expectations, Clarifying Roles, and Adapting Trust

Our data suggests, as shown in Figure 3, that the development of trust is part of a spiral process where expectations are developed and roles are clarified through interaction. Our empirical analysis suggests this process is fueled by the frequency, transparency, and persistence of communication. This finding suggests that alternative perspectives of trust, where trust is not an imminent consequence of use, may be more useful in describing emergent monitoring systems. Alternate conceptualizations of trust have

already proved to be useful in understanding other settings that contain contractual and relational components (Poppo & Zenger, 2002) and may prove useful for understanding how emergent monitoring systems are creating and evolving the “Uber economy.”

Future research is needed into exploration and validation of aggregate dimensions suggested by our study. It would be particularly interesting to explore the interrelations of these dimensions in enabling users to continue using platforms such as Uber. Further, other dimensions of interaction, such as information privacy of both riders and drivers, are worthy of investigation in this new environment and how new dimensions would interact with the ones proposed in our study.

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